



Arrow Vision Series – Power Management

Low and Mid Range Modular Power Design

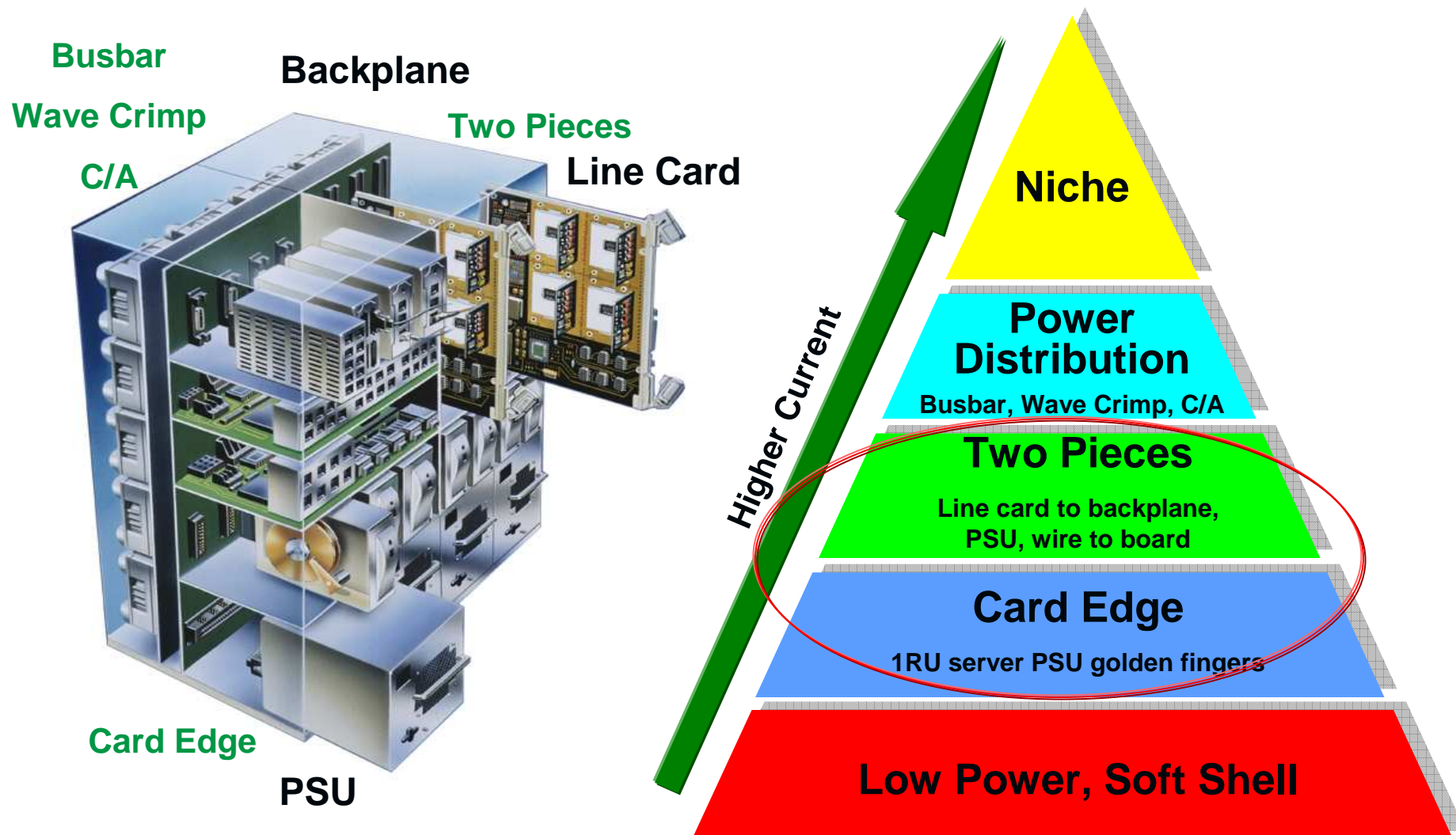
EVERY CONNECTION COUNTS



Agenda

- Market Overview and Portfolio
- PSU
- Card Edge
- Backplane
- Wire-to-Board / Wire-to-Wire

TE DataComm Power Portfolio Introduction



Mid Range Power Market Overview



MULTI-BEAM XLE



MINIPAK HDL



Card Edge

Application

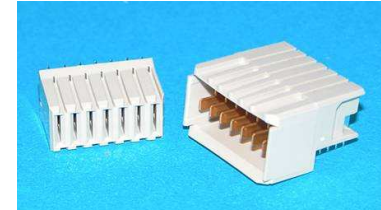
Power Supply connection to System.
Internal power distribution throughout the system
Board-to-Board and Cable-to-Board

End Products

- Mid-Range Servers (1U, 2U)
- Micro Servers (Rack Mnt 1U, etc.)
- Data Storage Equipment
- High End Routers and Switches
- Hot-Swappable Power Supplies

Market Trend & Drivers

- Increasing bandwidth systems with higher power consumption
- Increasing density requirements – requiring more Hybrid connectors
- Hybrid & compact
- Low contact resistance



UPM



AMP Power

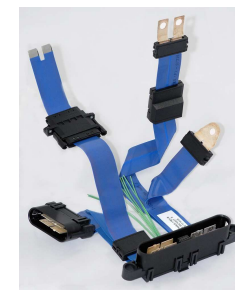
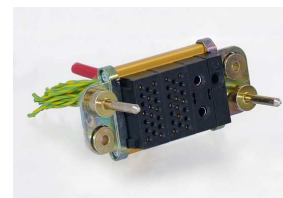
TE DataComm Broad Power Interconnect Portfolio

**Two
Piece**



**Board-to-board
Wire-to-board**

**Card
Edge**



Power Drawer & Wave Crimp



Busbar Connectors



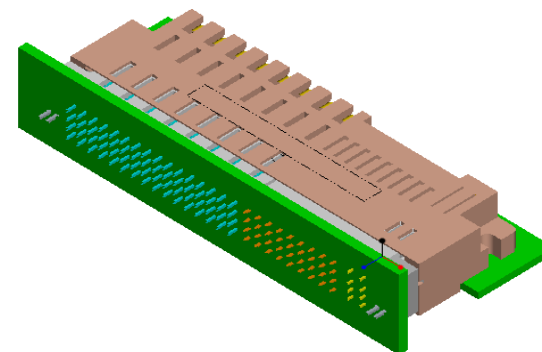
IO Power Sub Distribution



Mid Range Power

Power Distribution

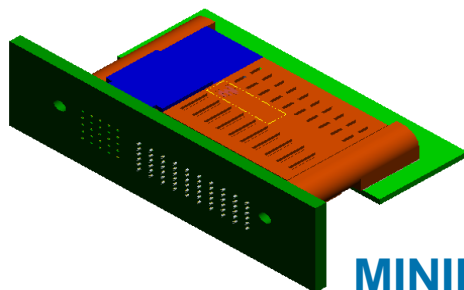
Market Leading Power Connectors



MULTI-BEAM XLE

Released & Primary Source

- 12.6mm above pcb
- 200-280 Amps per linear inch



MINIPAK HDL

Released & Primary Source

- 8mm above pcb
- 150-220 Amps per linear inch

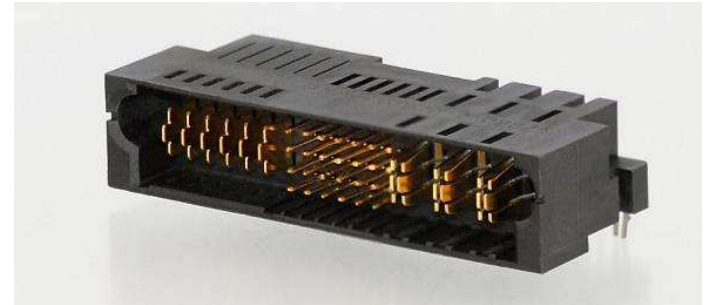
MULTI-BEAM XL

Released & Secondary Source

- 12.6mm above pcb
- 150-220 Amps per linear inch

Multi-Beam XLE Product Details

- Fully modular/scalable mold
- Available in PCB Mount: Vertical/RA, Cable mount: YXZ floating, Slide-to-Lock, Cable plugs XYZ floating and Squeeze-to-Release
- New 3-beam power contact: 50A high power contact (35% increase over XL)
- 20A low power contact (occupies 50% less PCB space than XL contact)
- Slimmer housing design allows 40% more current in the same space
- Hot pluggable
- Over 40% lower mating force than original XL
- Vented housing allows for better air flow



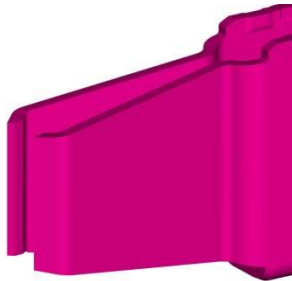
High Power contact



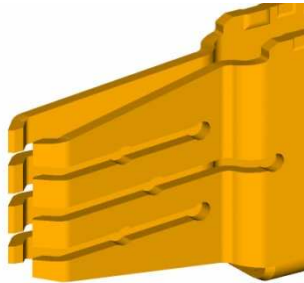
MULTI-BEAM XL / XLE Connectors

Power Contact Changes – Hot-Plug Feature

Original right angle
PCB plug contact –
dual beam design

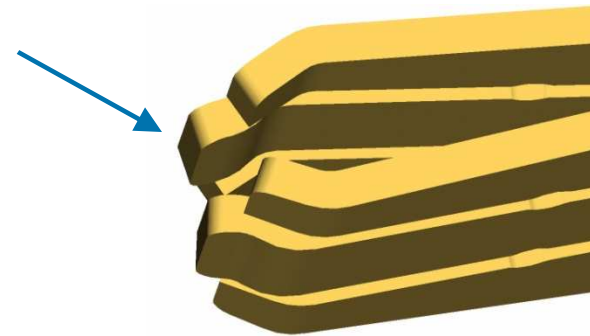


New right angle plug
contact MULTI-BEAM
XL design (8 beams)



Improved MULTI-BEAM XLE contact:

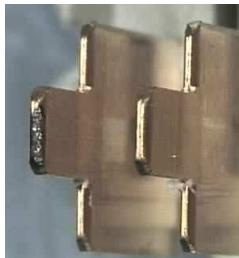
- 17% thicker material
- Multiple contact points (6 beams)
- Extended tip acts as sacrificial contact in hot-plug applications



Original designs were not designed for true hot-plug applications.

- They have been submitted and pass the UL requirement at lower ratings, however, the entire leading edge of the contact is destroyed during the hot-mating

Low power contact – after hot-plug testing

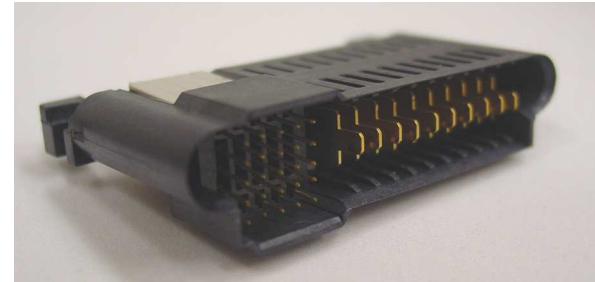


High power contact



MiniPak HDL Product Details

- It is a two-piece R/A and vertical board-to-board connector.
- It's the highest density, lowest profile, blind-mate, power/signal connector on the market.
- Ideal for power distribution, it was developed to meet next generation 1U applications by reducing airflow impedance and improving thermal performance.
- It utilizes a modular configurable mold to provide size flexibility to serve different customer applications



- Proven 2mm HM signals + UPM power contacts
- Single piece molded housing for best strength and alignment
- Power contacts available in groups of 2 (2, 4, 6, 8...)
- Signal contacts available in three sizes (15, 25, & 35)
- Gatherability - +/- 2mm

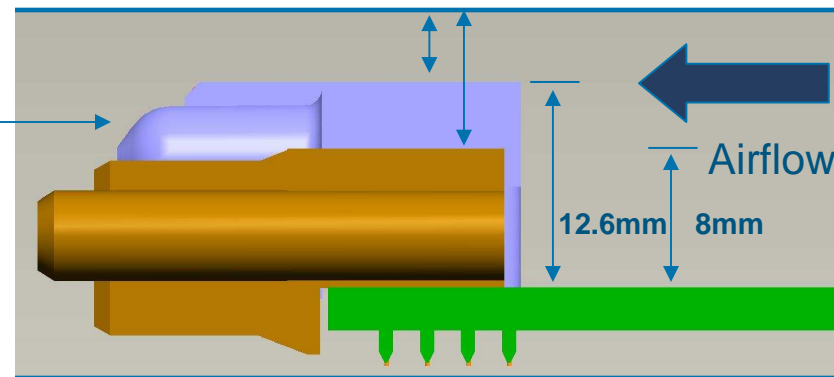
Minipak HDL Product Advantages

Low profile design -
Allows up to 2 X the room
for airflow above
connector, in 1U designs.

MULTI-BEAM XLE
Connector

MINIPAK HDL
Connector

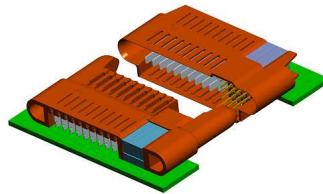
Simulated side-view of 1U Chassis:



Approx. 8mm overall height off PCB surface with the
same current density as MULTI-BEAM XL Connector –
37% less height off linecard / blade surface



Mid Range Power Portfolio Focus



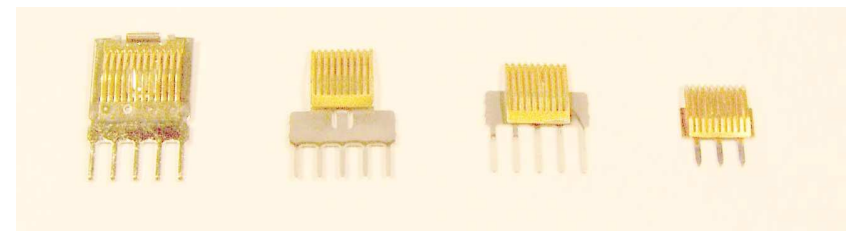
	Minipak HDL	MBXL	MBXLE
Height above PBC	8 mm	12.6 mm	12.6 mm
Modular/Scalable Mold	Yes	Yes	Yes
Current (Average)	20A	35A	25A & 50A
True Hot Plug	Yes	No	Yes
Resistance (milli-ohm)	1.2	0.7	0.5
Ventilated Housing	Yes	No	Yes

Power Card Edge Connectors

- Since 1998 TE has introduced many “industry first” card edge connectors designed for Power applications:

Current Power Card Edge Portfolio:
SEC-II Power, Crown Edge, Mini Crown Edge

- High Current Card Edge
 - For VRM 8.5 – 10.1
 - CROWN EDGE stackable
 - Mini CROWN EDGE
 - For VRM 10.2 – 12.X
 - SEC- II Power
 - For 1U Servers
 - CROWN EDGE Sr.
 - First to offer vented housings
 - SEC-II Power
- . . . and power density requirements continue to increase. . .

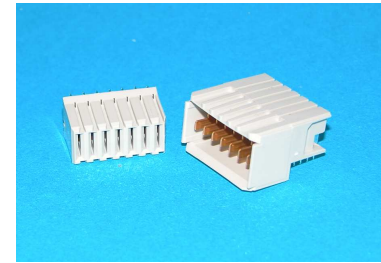


UPM / Slim UPM/Co-planar UPM- Power Connector

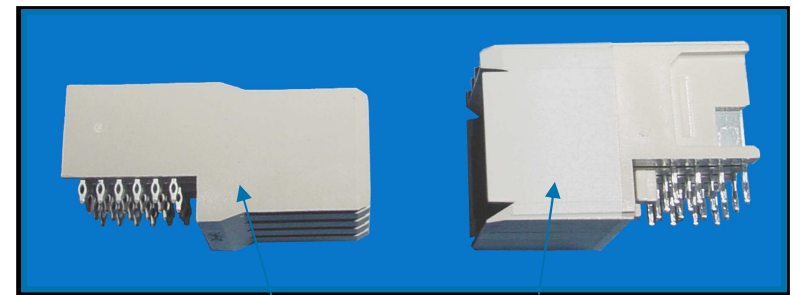
Brief Description

- Meet IEC 60950 touch-safe requirement
- Three contact mating length
- Hot plug design
- Low mating/unmating force
- High reliability and high durability (250)
- 16 Amps per contact (all contacts powered)
- Meet and exceeds SSI standard
- 3Pos. Through 9 pos.
- Mated height off pcb=9.7
- Designed to compliment HM-Zd

UPM



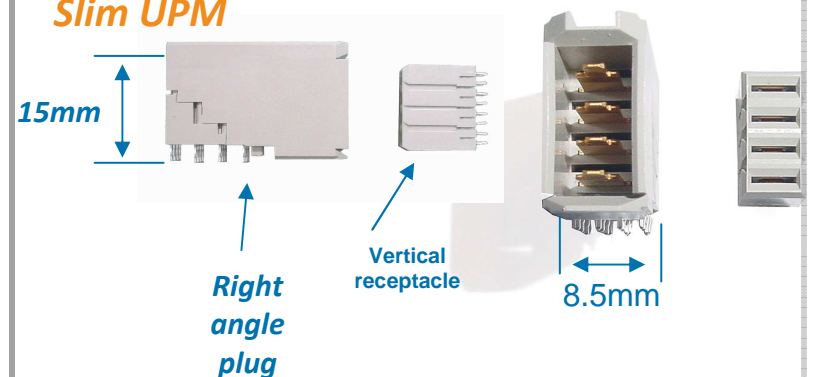
Co-planar UPM



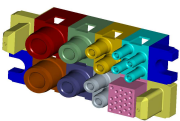



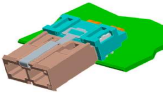

New right angle receptacle

Existing right angle plug

Slim UPM



Wire-To-Board & Wire-To-Wire Solutions

	Product Name	Application
	Forge	Cable-to-Cable Cable-to-Bar Blind-Mate Drawer, Latching
	Power Drawers	Cable-to-Cable Cable-to-Bar Blind-Mate Drawer, Latching
	Multi-Beam XLE	Cable-to-Board: Right Angle, Co-planar, Vertical
	Multi-Beam XL	Cable-to-Board: Right Angle, Co-planar, Vertical
	ET	Cable-to-Board: Right Angle, Vertical
	AMP Power Series	Cable-to-Cable Cable-to-Bar Cable-to-Board: Right Angle, Vertical

AMP Power Series

- Features and Benefits
 - Single-pole and 2-pole power connectors
 - Available in nine series with current ratings from 15 to 275* amps and voltage ratings up to 600 volts (AC or DC)
 - Contact wire range from 12 AWG to 300 MCM
 - Integral stainless steel locking spring in housing for contact retention and mating force



Accessories (not available for every series):

Reducing Bushings

Mounting Clamps

Mounting Wings

Retaining Pins

Battery Handle

Dust Cover

Strain Relief Cable Clamps

Plastic Handle

Outer Shell Housings (black) accept Single-Pole Housings to form 2- thru 10-Pole Connectors

Charger Key

Spacers

Board Contacts

More Information

- Multi-Beam XLE

<http://www.te.com/catalog/minf/en/565>



- MiniPak HDL

<http://www.te.com/catalog/minf/en/558?BML=10576,17560,17685,23928>

- Card Edge

<http://www.te.com/catalog/one-piece-card-edge-connectors/menu/en/17692?BML=10576,17560,17685>

- Universal Power Module

<http://www.te.com/catalog/minf/en/400>



- AMP Power

<http://www.te.com/catalog/minf/en/732>



For More Information:

Existing Arrow Customers: 800 777 2776

New Customers: 800 833 3557

www.arrownac.com/powermanagement